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IEEE Standards Terms

Seventh Edition

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capacity, specific unit, purchases or sales (electric power supply) Capacity that is purchased, or sold, in transactions with other systems and which is from a designated unit on the system of the seller. (PE/PSE) 346-1973w

capacity test (battery) A discharge of a battery at a constant current or a constant power to a specified voltage.

(SB/PE/EDPG) 1188-1996, 450-1995, 1106-1995

cap-and-pin insulator An assembly of one or more shells with metallic cap and pin, having means for direct and rigid mounting. *See also:* insulator. (EEC/IEPL) [89]

capstan A rotating shaft within a tape drive that pulls the tape across the read or write heads. (C) 610.10-1994w

capture effect (1) (modulation systems) The effect occurring in a transducer (usually a demodulator) whereby the input wave having the largest magnitude controls the output.

(Std100) 270-1964w

(2) The tendency of a receiver to suppress the weaker of two time-coincident signals within its passband.

(AES) 686-1997

capturing (accelerometer) (gyros) The use of a torquer (forcer) in a servo loop to restrain a gyro gimbal, rotor, or accelerometer proof mass to a specified reference position.

(AES/GYAC) 528-1994

car *See:* vehicle.

carabiner A connector component generally comprised of a trapezoidal or oval shaped body with a normally closed gate or similar arrangement which may be opened to permit the body to receive an object, and when released, automatically closes to retain the object. (T&D/PE) 1307-1996

carabiner, locking *See:* locking carabiner.

carabiner, manual locking *See:* manual locking carabiner.

carabiner, non-locking *See:* nonlocking carabiner.

car annunciator An electric device in the car that indicates visually the landings at which an elevator-landing signal-registering device has been actuated. *See also:* elevator.

(EEC/PE) [119]

carbon-arc lamp (illuminating engineering) An electric-discharge lamp employing an arc discharge between carbon electrodes. One or more of these electrodes may have cores of special chemicals that contribute importantly to the radiation.

(EEC/IE) [126]

carbon block protector An assembly of two or three carbon blocks and air gaps designed to a specific breakdown voltage. These devices are normally connected to telecommunication circuits to provide overvoltage protection and a current path to ground during such overvoltage. (PE/PSC) 487-1992

carbon brush (A) (motors and generators) A specific type of brush composed principally of amorphous carbon. *Note:* This type of brush is usually hard and is adapted to low speeds and moderate currents. (B) (motors and generators) A broader classification of brush, containing carbon in appreciable amount. *See also:* brush. (PE) [9]

carbon-consuming cell (carbon-combustion cell) A cell for the production of electric energy by galvanic oxidation of carbon. *See also:* electrochemistry. (PE/EEC) [119]

carbon-contact pickup A phonograph pickup that depends for its operation upon the variation in resistance of carbon contacts. *See also:* phonograph pickup. (EEC/PE) [119]

carbon-dioxide system (rotating machinery) A fire-protection system using carbon-dioxide gas as the extinguisher.

(PE) [9]

carbon-graphite brush A carbon brush to which graphite is added. This type of brush can vary from medium hardness to very hard. It can carry only moderate currents and is adapted to moderate speeds. *See also:* brush. (EEC/EM/LB) [101]

carbon noise (carbon microphones) The inherent noise voltage of the carbon element. *See also:* close-talking pressure-type microphones. (SP) 258-1965w

carbon-pressure recording facsimile That type of electromechanical recording in which a pressure device acts upon carbon paper to register upon the record sheet. *See also:* recording. (COM) 168-1956w

carbon telephone transmitter A telephone transmitter that depends for its operation upon the variation in resistance of carbon contacts. *See also:* telephone station.

(EEC/PE) [119]

car builder (1) The entity assembling or manufacturing the vehicle. (VT) 1475-1999

(2) The entity manufacturing the vehicle. (VT) 1476-2000

car, cable *See:* cable car.

carcinogen An agent that tends to produce cancer.

(T&D/PE) 539-1990

carcinotron (microwave tubes) (m-type backward-wave oscillator) A crossed-field oscillator tube in which an electron stream interacts with a backward wave on the nonreentrant circuit. The oscillation frequency is a function of anode-to-solve voltage. (ED) [45]

car, conductor *See:* conductor car.

card (1) (STD bus) A printed circuit board and components that make up the modules that plug in to the bus backplane.

(C/MM) 961-1987r

(2) (A) A generic term used as an abbreviation for a circuit board. (B) An input medium made of paperboard, formed in a uniform size and shape such that it may be punched or marked and sensed electronically. *See also:* magnetic card; mark-sensing card; punch card. (C) 610.10-1994

(3) (computers) *See also:* magnetic card; tape to card; punched card.

card cage A chassis in which a printed circuit board may be mounted. (C) 610.10-1994w

card code The set or combination of punched holes in a punch card that represent a character. (C) 610.10-1994w

card column A single vertical line of punch positions on a punch card. *Contrast:* card row. (C) 610.10-1994w

card deck A group of punch cards. (C) 610.10-1994w

card duplicator *See:* card reproducing punch.

card extender A device that provides access to components on a circuit card for testing purposes while maintaining all the electrical connections to the card.

(SWG/PE) C37.100-1992

card feed (1) (test, measurement, and diagnostic equipment) The mechanism that moves cards serially into a machine.

(MIL) [2]

(2) A mechanism that moves cards one at a time from the card hopper to the card path. (C) 610.10-1994w

card field (test, measurement, and diagnostic equipment) An area (one or more columns) of a card that is regularly assigned for the same information item. (MIL) [2]

card hopper (1) (computers) A device that holds cards and makes them available to a card-feed mechanism. *See also:* card stacker. (C) [85]

(2) The part of a card-processing device that holds the cards to be processed and makes them available to the card feed mechanism. *Synonym:* punched card holder. *Contrast:* card stacker. (C) 610.10-1994w

card image (1) (computers) A one-to-one representation of the contents of a punched card, for example, a matrix in which a 1 represents a punch and a 0 represents the absence of a punch. (C) [85]

(2) A representation of the hole patterns found in a punched card, for example, a matrix in which a one represents a punch and a zero represents the absence of a punch.

(C) 610.10-1994w

cardinality (1) (A) The number of elements in a set. (B) In a relational data model, the number of tuples in a relation.

(C) 610.5-1990

(2) The numeric relationship between entity sets, labeled as one to one (1-1), many to one (M-1), or many to many (M-N), which indicates the number of items in one entity set that could possibly be associated with the items in another entity set. (PE/EDPG) 1150-1991w

(3) A specification of how many instances of a first class may or must exist for each instance of a second (not necessarily distinct) class, and how many instances of a second class may

high events occur in time
ity or overlap of events.
parallel computer.

(C) 610.10-1994w

struct.

de of computer operation
onsecutively unless spec-
(MIL/C) [2], [20], [85]
ntial file.

romatic detection in two
ep uses a high probability
low probability of false
llable scanning, the first
scan to return to, stop at,
get position.

(AES) 686-1997

A system that monitors
process status and records
detected occurrences. This
using a device dedicated
multifunction system such
tem. (PE/EDPG) [5], [1]
accessed using sequential
a magnetic tape. *Synonyms*:
ntrast: partitioned data set;
(C) 610.5-1990w

ng.

unction in which there exists
t states for which there is
combination of states at the
unctions of variables in ad-
nputs, such as time, previous
:(GSD) 91-1984r

events recording systems)
in the same order in which
n. The memory capacity can
events or levels. *See also*:
(PE/EDPG) [5], [1]

o the performance of opera-
(C) [20], [85]

See: hierarchical database.
rocesses that execute in such
fore the next begins. *See also*:
(C/SE) 729-1983s

processing.

measurement, and diagnostic
of a device by which only one
can be executed at one time.
(MIL) [2]

ontrols two or more sets of con-
fice. *See also*: relay.

(EBC/REE) [87]

A rectilinear scanning process
nter to center of successively
nominal line width. *See also*:
(PE/EEC) [119]

hich the items in a set are ex-
the first item in the set, until
end of the set is encountered.

(C) 610.5-1990w

of accelerated aging in which
es are applied or intensified in
(DEI/RE) 775-1993w

operation with multiple data
se. *See also*: transfer operation;
(C/MM) 1296-1987s

where one or more relay ter-
t an internal line fault, typically
or more terminals has already
ed. (PE/PSR) C37.113-1999

serial (1) (A) Pertaining to the time sequencing of two or more processes. **(B)** Pertaining to the time sequencing of two or more similar or identical processes, using the same facilities for the successive processes. **(C)** Pertaining to the time-sequential processing of the individual parts of a whole, such as the bits of a character, the characters of a word, etc., using the same facilities for successive parts. *See also*: serial-parallel. (C) 162-1963

(2) (software) Pertaining to the sequential transfer, occurrence, or processing of the individual parts of a whole, such as the bits of a character, using the same facilities for successive parts. *Contrast*: parallel. *See also*: sequential. (C) 610.12-1990

(3) One bit following another over a single pathway. *Contrast*: parallel. *See also*: bit serial. (C) 610.10-1994w

serial access (1) (computers) Pertaining to the process of obtaining data from, or placing data into, storage when there is a sequential relation governing the access time to successive storage locations. (C) [20], [85]

(2) (data management) *See also*: sequential access. (C) 610.5-1990w

serial access storage *See*: sequential access storage.

serial adder An adder in which addition is performed by adding, digit place after digit place, the corresponding digits of the operands. *Contrast*: parallel adder. (C) 610.10-1994w

serial addition Addition that is performed by adding the corresponding digits of the operands, one digit place at a time. *Contrast*: parallel addition. (C) 1084-1986w

serial by bit *See*: serial transmission.

serial bus (1) Intended as a low-cost peripheral connect or an alternate diagnostic and control path. One instantiation of a serial bus is the "Serial Bus" as specified in IEEE P1394. (C/BA) 896.2-1991w

(2) A peripheral interconnect and an alternate diagnostic and control path. (C/BA) 896.10-1997

Serial Bus (1) The name that refers to the IEEE project, P1394, which specifies a serial bus intended as a low-cost peripheral connect or an alternate diagnostic and control path. (C/MM) 1212-1991s

(2) A bit-serial interconnect defined by IEEE P1394. (C/MM) 1212.1-1993

(3) Refers to the IEEE P1394 project, which defines an inexpensive serial network that can be used as an alternate control or diagnostic path, as an I/O connection, or in place of a parallel bus in some systems. (C/MM) 1596.5-1993, 1596-1992

Serial Bus management The set of protocols, services, and operating procedures that monitors and controls the various Serial Bus layers: physical, link, and transaction. See figure 34 for the relation of Serial Bus management to the Serial Bus protocol stack. (C/MM) 1394-1995

serial clock driver A functional module that provides a periodic timing signal that synchronizes the operation of IEEE P1132 serial bus. Two backplane signal lines are reserved for use by a serial bus. However, the protocols of the serial bus are completely independent of this standard, and the inclusion of a serial bus is not a required feature of IEEE Std 1014-1987. (C/BA) 1014-1987

serial communication (1) (supervisory control, data acquisition, and automatic control) A method of transmitting information between devices by sending all bits serially over a single communication channel. (SWG/PE/SUB) C37.100-1992, C37.1-1994

(2) Method of transferring information between devices by transmitting a sequence of individual bits in a prearranged order of significance. (SUB/PE) 999-1992w

serial computer (A) A computer that has a single arithmetic and logic unit. **(B)** A computer, some specified characteristic of which is serial; for example, a computer that manipulates all bits of a word serially. *Contrast*: parallel computer. (C) 610.10-1994

serial construct A program construct consisting of a sequence of steps not involving a decision or loop. *Synonym*: sequential construct. (C) 610.12-1990

serial digital computer A digital computer in which the digits are handled serially. Mixed serial and parallel machines are frequently called serial or parallel according to the way arithmetic processes are performed. An example of a serial digital computer is one that handles decimal digits serially although it might handle the bits that comprise a digit either serially or in parallel. *See also*: parallel digital computer. (Std100) 270-1966w

serial file *See*: sequential file.

serial interface An interface that transmits data bit by bit rather than in whole bytes. (C) 610.10-1994w

serialization Serialization is the process of transmitting coded characters one bit at a time. *See also*: deserialization. (C/BA) 1355-1995

serializer A device that converts a set of simultaneous signals into a corresponding time sequence of signals. *Synonyms*: parallel-serial converter; dynamicizer. (C) 610.10-1994w

serially correlated variable *See*: lag variable.

serial medium A medium that contains a POSIX.1 extended tar or extended cpio archive. (C/PA) 1387.2-1995

serial mouse A mouse that is connected to a computer system through a serial port. *Contrast*: bus mouse. (C) 610.10-1994w

serial operation (data transmission) (telecommunications) The flow of information in time sequence, using only one digit, word, line, or channel at a time. (PE) 599-1985w

serial-parallel Pertaining to processing that includes both serial and parallel processing, such as one that handles decimal digits serially but handles the bits that comprise a digit in parallel. (C) 162-1963w

serial port A port that transfers data one bit at a time. *Contrast*: parallel port. (C) 610.10-1994w

serial printer A printer that receives its input data in the form of a serial stream of data. *Contrast*: parallel printer. *See also*: character-at-a-time printer. (C) 610.10-1994w

serial processing Pertaining to the sequential execution of processes in a single device, such as a processing unit or channel. *Synonym*: sequential processing. *Contrast*: parallel processing. (C) 610.10-1994w

serial protocol Any communication protocol in which data is transferred serially to or from a fixed location. (C/MM) 1155-1992

serial transmission (1) (data transmission) (telecommunications) Used to identify a system wherein the bits of a character occur serially in time. Implies only a single transmission channel. *Synonym*: serial by bit. (PE) 599-1985w

(2) In data communications, the conveying of a character of information one bit at a time on a single path. *Contrast*: parallel transmission. (C) 610.7-1995

series In a propulsion system, the motor connection in which all motors are connected in a series circuit for the purpose of applying to them some fraction (usually one half) of the maximum available per-motor voltage. (VT) 1475-1999

series capacitor A device that has the primary purpose of introducing capacitive reactance in series with an electric circuit. (T&D/PE) 824-1994

series capacitor bank (series capacitor) An assembly of capacitors and associated auxiliaries, such as structures, support insulators, switches, and protective devices, with control equipment required for a complete operating installation. (T&D/PE) 824-1994

series circuit A circuit supplying energy to a number of devices connected in series, that is, the same current passes through each device in completing its path to the source of supply. *See also*: center of distribution. (T&D/PE) [10]

series circuit lighting transformer (power and distribution transformers) Dry-type individual lamp insulating transformer, autotransformer, and group series loop transformers

ears.
 2.22-1997, C62.11-1999
 aced electrodes. The gap
 n element of the protec-
 ne element from line or
 voltage conditions.
 (SPD/PE) C62.62-2000
for industrial applica-
 igned to have a specific
 a given length.
 (BT/AV) 152-1953s
 that are electrically con-
 : path and have a specific
 r a given length.
) 515.1-1995, 515-1997
 nces are inserted in series
 n circuit. *See also:* load-
 (EEC/PE) [119]
 ntial-mode interference.
 ich the plate circuits of a
 mplifier tube are in series
 (EEC/PE) [119]
 n of electrical noise that
 white noise generator con-
 ie device.
 (NPS) 325-1996
 he output of two or more
 r to obtain a total output
 individual voltages. Load
 h each supply. The extent
 ie maximum specified po-
 tential and ground. For
 :ors, master/slave (compli-
 over is used. *See also:* iso-
 (AES) [41]
 vercurrent release; direct
 gement of cells in a battery
 : series-connected groups,
 cells so that the positive
 cted together and the neg-
 egether in a corresponding
 (EEC/PE) [119]
 controlling motors wherein
 be connected successively
 multiple-unit control.
 (EEC/PE) [119]
 ck, containing only two-ter-
 ructed by successively con-
 in parallel. *Note:* An ele-
 mbination of two branches,
 luctance in series, the other
 work is sometimes called a
 network analysis.
 (Std100) 270-1966w
ansformer One that has two
 are intended for connection
 fferent rated currents.
 (PE/TR) C57.13-1993, [57]
machinery The process of
 t to the supply with the pri-
 ally in series, and changing
 n for running operation. *See*
 (PE) [9]
Parameter or a Vector Series
 (IM/ST) 1451.1-1999
 ug of a tested combination of
 roective device and a load-
 which the interrupting rating
 an the interrupting rating of
 interrupting rating of the se-

ries combination does not exceed the interrupting rating of
 the main overcurrent protective device.

(IA/PSP) 1015-1997

series rectifier circuit A rectifier circuit in which two or more
 simple rectifier circuits are connected in such a way that their
 direct voltages add and their commutations coincide. *See*
also: rectifier circuit element; rectification. (IA) [12]

series regulator (power supplies) A device placed in series
 with a source of power that is capable of controlling the volt-
 age or current output by automatically varying its series re-
 sistance. (AES) [41]

series relay *See:* relay; current relay.

series resistor (electric instruments) A resistor that forms an
 essential part of the voltage circuit of an instrument and gen-
 erally is used to adapt the instrument to operate on some des-
 ignated voltage or voltages. The series resistor may be inter-
 nal or external to the instrument. *Note:* Inductors, capacitors,
 or combinations thereof are also used for this purpose. *See*
also: auxiliary device to an instrument. (EEC/AII) [102]

series snubber (ac adjustable-speed drives) Circuit elements,
 usually including an inductor, connected in series with a
 switching device to limit the rate of rise or fall of current
 through the device when switching on or off, respectively.
See also: snubber. (IA/ID/SPC) 995-1987w, 936-1987w

series street-lighting transformer (power and distribution
transformers) A series transformer that receives energy from
 a current-regulating series circuit and that transforms the en-
 ergy to another winding at the same or different current from
 that in the primary. *See also:* specialty transformer.
 (PE/TR) C57.12.80-1978r, [57]

series system The arrangement in a multielectrode electrolytic
 cell whereby in each cell an anode connected to the positive
 bus bar is placed at one end and a cathode connected to the
 negative bus bar is placed at the other end, with the interven-
 ing unconnected electrodes acting as bipolar electrodes. *See*
also: electrorefining. (EEC/PE) [119]

series tee junction *See:* E-plane tee junction.

series thyristor converter A thyristor converter in which two
 or more simple converters are connected in such a way that
 their direct voltages add and their commutations coincide.
 (IA/IPC) 444-1973w

series transformer (1) (power and distribution transformers)
 A transformer with a "series" winding and an "exciting"
 winding, in which the "series" winding is placed in a series
 relationship in a circuit to change voltage or phase, or both,
 in that circuit as a result of input received from the "exciting"
 winding. *Note:* Applications of series transformers include:

- 1) Use in a transformer such as a load-tap-changing or reg-
 ulating transformer to change the voltage or current duty
 of the load-tap-changing mechanism.
- 2) Inclusion in a circuit for power factor correction to indi-
 rectly insert series capacitance in a circuit by connecting
 capacitors to the exciting winding.

(PE/TR) C57.12.80-1978r

(2) A transformer in which the primary winding is connected
 in series with a power-supply circuit, and that transfers energy
 to another circuit at the same or different current from that in
 the primary circuit. *See also:* transformer. (PE/TR) [57]

series transformer rating (power and distribution trans-
formers) The lumen rating of the series lamp, or the wattage
 rating of the multiple lamps, that the transformer is designed
 to operate. (PE/TR) C57.12.80-1978r

series-trip recloser A recloser in which main-circuit current
 above a specified value, flowing through a solenoid or oper-
 ating coil, provides the energy necessary to open the main
 contacts. (SWG/PE) C37.100-1992

series two-terminal pair networks Two-terminal pair networks
 are connected in series at the input or at the output terminals
 when their respective input or output terminals are in series.
See also: network analysis. (BT) 153-1950w

series undercurrent tripping *See:* direct release; undercurrent
 release.

series unit (power and distribution transformers) The core
 and coil unit which has one winding connected in series in
 the line circuit. (PE/TR) C57.12.80-1978r

series weighting Response weighting by separating a finger into
 individual elements with capacitive coupling between them;
 the elements may be separated from the bus bar.

(UFFC) 1037-1992w

series winding (1) (A) (autotransformer) (power and distri-
bution transformers) That portion of the autotransformer
 winding which is not common to both the primary and the
 secondary circuits, but is connected in series between the in-
 put and output circuits. **(B) (power and distribution trans-**
formers) The winding of the series unit which is connected
 in series in the line circuit. *Note:* If the main unit of a two-
 core transformer is an autotransformer, both units will have
 a series winding. In such cases, one is referred to as the series
 winding of the autotransformer and the other, the series wind-
 ing of the series unit. (PE/TR) C57.12.80-1978

(2) That portion of the autotransformer winding that is not
 common to both the primary and secondary circuits, but is
 connected in series between the input and output circuits.
 (PE/TR) C57.15-1999

series-wound (rotating machinery) A qualifying term applied
 to a machine to denote that the excitation is supplied by a
 winding or windings connected in series with or carrying a
 current proportional to that in the armature winding. *See also:*
 asynchronous machine. (PE) [9]

series-wound motor (1) The conductors and equipment for de-
 livering energy from the electricity supply system to the wir-
 ing system of the premises served. (NESC/NEC) [86]

(2) A dc motor in which the field circuit and armature circuit
 are connected in series. Speed is inversely proportional to the
 square root of load torque. Motor operates at a much higher
 speed at light load than at full load. (IA/MT) 45-1998

servant A device that is controlled by a commander. There are
 message-based and register-based servants.

(C/MM) 1155-1992

server (1) (telecommunications switching systems) A system
 component that performs operations required for the process-
 ing of a call. *See also:* traffic usage count.

(COM/TA) 973-1990w

(2) **(MULTIBUS II)** An agent that performs a service for
 clients. *See also:* client. (C/MM) 1296-1987s

(3) In a network, a device or computer system that is dedi-
 cated to providing specific facilities to other devices attached
 to the network. *Contrast:* client. *See also:* mail server; disk
 server; file server; terminal server; network server; database
 server; print server. (C) 610.7-1995

(4) The facility in the terminal or work station that provides
 input (keyboard, mouse) and output (screen graphics) services
 to the application. *Synonym:* X server. (C) 1295-1993w

(5) The software component on one device that provides ser-
 vices for use by clients on the same or another device.
 (C/MM) 1284.4-2000

(6) *See also:* batch server.

Server Object Any Object that executes one or more of its
 operations in response to a request from a Client object.

(IM/ST) 1451.1-1999

Server Object Tag An attribute of a Client Port that identifies
 the Object Tag of the Server Object with which the Port com-
 municates in client-server communications.

(IM/ST) 1451.1-1999

Service An instance of a subclass of IEEE1451.Service.

(IM/ST) 1451.1-1999

service (1) (electric systems) The conductors and equipment
 for delivering electric energy from the secondary distribution
 or street main, or other distribution feeder, or from the trans-
 former, to the wiring system of the premises served. *Note:*
 For overhead circuits, it includes the conductors from the last
 line pole to the service switch or fuse. The portion of an